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COMPUTERNEWS

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Janet Campbell, Editor

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COMPUTERNEWS is a monthly publication produced by the University of Toronto Computer Centre. Enquiries or contributions should be directed to the Editor, Janet Campbell or the Assistant Editors, Margo Harvie and Ruth Borenstein in the Sandford Fleming Building, room 137 or (416)-978-2066. Layout and ATS typing are provided by Kathryn Bourne. Subscription changes should be directed to the Information Office, Sandford Fleming Building, room 128 or (416)-978-4990.

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WELCOME BACK

September is back, bringing with it new students and faculty along with many members of last year's user community. The University of Toronto Computer Centre (UTCC) extends a warm welcome to all newcomers and a welcome back to old users.

The articles appearing in this issue of COMPUTERNEWS describing the various services available at UTCC should help the new user to become better acquainted with Computer Centre facilities. In addition, new users are invited to drop in and talk to any of the Computing Co-ordinators located across the various University of Toronto campuses. They are there to help new users get started with computing at the Centre by providing assistance and consultation.

Although the majority of UTCC services have undergone no major changes, users should take note of the following:

- price increases for Unit Record Services (see USERBOOK 2.7000)
- fourth megabyte added to S/370-165-II (see COMPUTERNEWS - August 1976)
- Access Control System for HSJS (see signs, COMPUTERNEWS - August 1976)

It is UTCC's aim to provide the best possible computing services for the University of Toronto community. Both new and old users are urged to help us in our efforts by communicating any suggestions or comments in the following ways:

- writing on Graffiti sheets (located at terminal sites)
- using ISUGGEST facility
- attending User Forums
- writing letters to, or telephoning, UTCC staff
- dropping in for coffee and conversation

The Computer Centre is counting on your participation in their ongoing effort to improve computing services at the University of Toronto.

Stan Yagi
Manager, Services

THE SANDFORD FLEMING SITE

The Sandford Fleming site consists of four user service areas: the Sandford Fleming Terminal (SF112), the Engineering Undergraduate Terminal (SF130), the Advising Office (SF117) and the Information Office (SF128).

Sandford Fleming Terminal (SFT) is the busiest of all the General Purpose Job Stream terminals at UTCC. On an average day during the school year, approximately 1500 jobs are processed. The terminal is equipped with two self-service 2501 card readers, two self-service 1403 printers, one 1403 printer dedicated to special form mounts and confidential output, and one 2540 card reader/punch. Operators are available at the terminal from 8:00 to 22:00, Monday through Friday and from 10:00 to 18:00, Saturday and Sunday. During the remaining hours of service, a skeleton staff is available for "emergency" operational assistance.

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THE SANDFORD FLEMING SITE cont'd

The Engineering Undergraduate Terminal (EUT) is designed to handle a large volume of High Speed Job Stream (HSJS) jobs and provides a "cafeteria style" service. The user prepares his deck at one of the keypunches available at the terminal and then reads his job into a 2501 card reader. Jobs are processed in order of submission. After the job has been read in, the user proceeds to the 1403 printer for retrieval of output. Although there is no operator available at EUT, one may be reached, if necessary, by using the intercom located beside the reader or by contacting the SFT operator. EUT is open for service during all scheduled hours of service for the S/370-165-II.

Users with questions or comments concerning the Sandford Fleming Terminal, the Engineering Undergraduate Terminal or the Information Office, should contact Don Gibson in the Information Office (SF128) or call 978-5568. Questions concerning Sandford Fleming advising, should be directed to Mark Tapia in SF125, 978-7109.

Don Gibson

SANDFORD FLEMING ADVISING OFFICE

UTCC offers an advising service for users who are experiencing repeated difficulties with the running of their jobs. Please remember, however, that advisors are there to help the user solve his own problem. Due to the heavy demand for their services, advisors cannot attempt to solve complicated logic problems.

The advising hours currently in effect at the Sandford Fleming Terminal (SF117) will again be extended for the winter term. The new hours, effective September 20 to December 5, 1976, will be as follows:

Monday - Thursday	10:00 - 20:00
Friday	10:00 - 17:00
Saturday - Sunday	12:00 - 17:00

Users with questions concerning the Sandford Fleming Advising Service should contact Mark Tapia in SF125, 978-7109.

Mark Tapia

INFORMATION OFFICE AND REFERENCE CENTRE

The Information Office and Reference Centre, located in Room 128 of the Sandford Fleming Building, maintains a collection of computer-related publications for users and staff. This collection includes conference proceedings, technical reports, periodicals, newsletters for over 100 installations, catalogues, directories, textbooks and manuals associated with programming, programming languages and special applications. In addition, the Information Office also serves as the distribution centre for all UTCC produced publications such as USERBOOK and COMPUTERNEWS.

While the Reference Centre maintains an up-to-date set of all publications that users may need to refer to, a selection of the more popular manuals is available for sale. Any manual not stocked may be ordered on an individual basis. Course instructors may also make arrangements to have a certain manual stocked for their students at the Information Office.

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INFORMATION OFFICE cont´d

The Information Office is open from 9:00 am to 5:00 pm, Monday through Friday. The feasibility of extending these hours for the fall term is currently under consideration.

Marg Doherty

THE COMPUTING CO-ORDINATOR

During the year, UTCC users have a variety of questions concerning many different aspects of computing at the University of Toronto. To obtain answers to your computing questions contact any Computing Co-ordinator. If he is unable to answer your question he will refer you to a UTCC staff member who can solve your problem. All referrals and follow-ups are handled by the Computing Co-ordinator in the interest of the user.

The following is a list of the terminal locations and the Computing Co-Ordinators responsible for each terminal.

Arts and Science Terminal
Room 2105
Sidney Smith Building
St. George Campus
University of Toronto

Dave Tritchler
978-6509

Erindale College
Room 2039
Erindale Campus
University of Toronto

Clem DiPlacido
828-5311

New Physics Terminal
Room 1202
Burton Tower
St. George Campus
University of Toronto

John Roth
978-8823

Sandford Fleming Terminal
Rooms 125, 117
Sandford Fleming Building
St. George Campus
University of Toronto

Mark Tapia
978-7109

Advisors
978-8599

Scarborough College
Room S630
Scarborough Campus
University of Toronto

Martin Hubel
284-3173

The following personnel, provided by terminal sponsors, are available for operational assistance.

Institute for Aerospace Studies
Room 162
Aerospace Studies Building
Dufferin Campus
University of Toronto

Kee Ong

Faculty of Dentistry
Dentistry Building
St. George Campus
University of Toronto

Bob Kazluskas

cont´d...

THE COMPUTING CO-ORDINATOR cont'd

Policy Analysis
Room 109
150 St. George Street
Coachhouse
University of Toronto

George Ugray

Zoology Terminal
Ramsey Wright Building
Room 109
St. George Campus
University of Toronto

John Kornatowski

Faculty of Management Studies
Room 219
246 Bloor Street West
St. George Campus
University of Toronto

Eric Lakien

UTCC's main function is to provide computing facilities for the University of Toronto. The Computing Co-Ordinator is there to help users make use of these facilities.

Ralph Lombardi

WELCOME TO ERINDALE

In Montreal, the Olympics provided the world with sporting history; in Paris, Ives St. Laurent unveiled his fall collection; in Kansas City, the G.O.P. chose a presidential candidate; in Mississauga, Erindale College is ready for a new season of batch and interactive computer users.

Batch users will experience a new design in computer room arrangement, entitled the "spacious look". Their main mode of computing will be the Remcom batch terminal located in room 2040 and 12 Keypunches (IBM 029) located in room 2039. The interactive users will be at the control of our new armada of DECwriter terminals which are located in room 2045. These terminals offer greater speed, convenience, quieter operation, and reliability than their predecessor the IBM 2741(R.I.P.).

The staff at the computer centre is known to the "connoscenti" of computer personnel as the best in the west. Muriel Elles, our veteran operator, is returning for another season of mediation between user and machine. In the battle of minds and machine the Computing Co-ordinator (yours truly) will attempt, in a spirit of co-operation and friendship, to help remedy, advise, console, or bury users' programs.

The Centre (Interactive and Batch) will be open for business from 9am to 5pm Monday - Friday until the latter part of September at which time the Centre will open from 9am to 10pm Monday - Friday and 12 noon to 5pm on Saturdays. A select group of advisor/operators will be available during the extended hours of service. The Keypunch area (rm. 2039) is open 24 hours.

It is mainly through user comments that many changes take place. Therefore, if you have any suggestions as to how we can improve our services, we will be happy to discuss them with you, at your convenience (probably over coffee).

Muriel and I wish to extend a warm welcome to the new and old faculty, staff and students who will be using our facilities.

Clem DiPlacido

COMPUTING AT SCARBOROUGH COLLEGE

The Computer Centre at Scarborough is located on the sixth floor of the "S" wing. The terminal is operated on a self-serve basis with assistance available for problems and questions.

Our hardware consists of a Remcom remote batch terminal which is connected to the IBM 370/165-II on the St. George campus. This unit is capable of providing both High Speed and General Purpose Job processing. Other equipment includes an on-line interpreter punch, thirteen keypunches, and three interactive terminals for APL, ATS and TSO users.

Normal operating hours during most of the fall and winter terms are Monday to Thursday 9:00 to 22:00, Friday 9:00 to 17:00, and 13:00 to 18:00 on Saturday. The keypunches are available whenever the building is open. Please check the posted schedules for any changes in these hours.

As I am new at Scarborough myself, please feel free to come up and say hello to me, Martin Hubel, or give me a call at 284-3173. There have been a number of changes over the summer so even the veteran users of Scarborough might like to stop in too.

Martin Hubel

NEW PHYSICS TERMINAL

The New Physics Terminal is alive and well with prestige quarters in the high rent district, Room 1202 of the Burton Tower. The January hardware re-configuration has settled in, and it is hoped that the September movement of the Zoology REMCOM terminal (same Hardware) to the New Physics terminal will go as smoothly. The terminal is almost completely self-service, and is open around the clock. (Users may need a key to get into the building after hours.) The terminal is, however, restricted to faculty, staff and graduate student use.

The Computing Co-ordinator is available for assistance Monday to Friday, from about 9:30 to 17:30 in room 1203b, Burton Tower.

John Roth

COMPUTING IN THE SIDNEY SMITH BUILDING - AST/ASUT

The Arts and Science Terminal (AST) is located in room 2105, Sidney Smith Building. The terminal is available on a self-service basis to Service Access Code holders, with Computer Centre staff on hand in the adjacent room, 2104, to assist with problems.

The remote batch terminal connected to the IBM S/370-165-II, consists of a REMCOM card reader and line printer, with an on-line Univac verifier-interpreter-punch for punched output.

Other facilities at AST include keypunches, a Backlog display unit, worktables, an extensive collection of manuals, and card storage cabinets.

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COMPUTING cont'd

Users who do not hold an Access Code may use the Arts and Science Undergraduate Terminal (ASUT) in room 1073, to submit their programs to the High Speed Job Stream (HSJS). ASUT's facilities consist of an IBM card reader and line printer, keypunches and in room 1075 - worktables and manuals. The facilities are self-service with assistance available in room 2104 when the operator is not present.

The hours of operation at AST and ASUT are 8 A.M. - 10 P.M., Monday through Friday, and 10 A.M. - 6 P.M. on Saturday and Sunday.

The current advising hours of 9 A.M. - 5 P.M., Monday through Friday will be extended to 9 A.M. - 8 P.M. Monday - Friday and 12 P.M. - 5 P.M., Saturday and Sunday, effective September 20, 1976.

Operational and programming problems and general enquiries and suggestions, may be referred to the Computing Co-ordinator (978-6509), or the Operator/Advisor, Winston Davis.

David Tritchler

UTCC PUBLICATIONS

The University of Toronto Computer Centre publishes a variety of documentation designed to describe and explain the services and facilities available to UTCC users. The following UTCC publications are available from the Information Office, located in the Sandford Fleming Building, Room 128 and from the Computing Co-ordinators.

COMPUTERNEWS

The Computer Centre's newsletter is a monthly publication which describes staff and systems activities. It is available free of charge to all UTCC users.

UTCC USERBOOK

The USERBOOK is the basic reference manual for all computing services available at UTCC. Its modular design allows each subscriber to compile a reference manual customized to meet individual documentation needs. The USERBOOK is updated on a regular basis and updates are mailed automatically to subscribers.

USERBOOK KWIC INDEX

The KWIC index is a comprehensive keyword index for USERBOOK Section 3(S/370-165-II Services). The index references only base chapters. Keywords are listed alphabetically along with the immediate context and the page number. Reference copies of the index are available to users in the Information Office and Advising Office - SF117 and at the various batch terminals.

MINI GUIDE TO UTCC

This pocket-sized guide provides a general description of the computer facilities available at UTCC.

HOW TO SERIES

The HOW TO series of manuals is designed to assist users in the operation of the self-service equipment at UTCC. Each manual describes the basic techniques required to operate the equipment; step-by-step explanations are accompanied by examples and photographs. At present, the series contains three manuals. These are:

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PUBLICATIONS cont´d

1. HOW TO USE
   - AN IBM 029 KEYPUNCH
   - AN IBM 2501 CARD READER
   - AN IBM 1403 LINE PRINTER

2. HOW TO USE
   - A REMCOM CARD READER
   - A REMCOM LINE PRINTER
   - A REMCOM TERMINAL STARTUP/ PROCEDURE
   - A REMCOM CARD PUNCH

3. HOW TO USE
   - AN IBM 029 KEYPUNCH DRUM

REFERENCE CARDS

4 pocket-size reference cards describing ATS ATS/RJE, TSO, SPEAKEASY, and the GPJS Job Statement are available to all users and can be obtained from the Information Office, SF128 and all Computing Co-ordinators.

DATATALK BROCHURE

This pocket-sized brochure introduces and describes DATATALK, a computer service offered by UTCC at no charge for casual inquiry and problem solving over the phone.

The UTCC Publications Group´s objective is to provide accurate, up-to-date documentation which will facilitate the use of the Centre´s products and services. In order to meet this objective, we require feedback from our readers. Users with suggestions, comments and criticism re UTCC documentation are invited to contact any member of the Publications Group in the Sandford Fleming Building, room SF137, phone 978-2066.

Janet Campbell

MARKETING AND PROGRAMMING SERVICES

Last year we announced the formation of the Marketing Services Group. Since that time Marketing has become heavily involved in providing assistance to users and potential users of UTCC.

We have found that many of our customers wish to have specific computer applications written by professionals. As a result, Marketing works closely with our Programming Services Group.

In the past year Programming Services have written applications in the research, administrative and educational fields. Our group has developed a broad range of expertise and has handled requests ranging from simple statistical analysis programs to full-scale information retrieval systems.

For further information call Marketing Services, 978-6355.

Bill Gillart/Helen Peacock

THE UTCC ACCOUNTING OFFICE

The Accounting Office forms part of the Administration Group and is responsible for Accounts and Access Codes at UTCC. This includes:

(i) Opening and modifying Accounts and Access Codes

(ii) Advising users of the status of their Accounts and Access Codes

(iii) Distribution of monthly statements and billings.

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ACCOUNTING OFFICE cont'd

Detailed information on accounting policies and procedures are outlined in USERBOOK Section 2.

The clerks responsible for managing the system and assisting users re clerical problems are:

Yvonne Bowen (978-8703) - Systems Access Codes (SAC)

Wynona Bardgett (978-8702) - Customer Account Numbers (CAN)

Anne DeFazio (978-7148) - Customer Account Numbers (CAN)

Technical problems should not be referred to the Accounting Office but rather to an advisor or Computing Co-ordinator.

Business hours are Monday - Friday 9am - 4:30pm (9am-4pm July and August). The Accounting Office is located in Room 139, Sandford Fleming Building.

Ron Moses

SOME INTERACTIVE COMPUTER APPLICATIONS AVAILABLE AT UTCC

This article is intended to provide a brief description of various UTCC facilities (available on either the S/360-65 or the S/370-165-II) which can be accessed interactively.

ATS/360

ATS/360 (Administrative Terminal System/360) is a computer program used for typing, storing, correcting and obtaining formatted printouts of letters, essays, manuscripts, etc. Users are connected to ATS by typewriter - like terminals where they can learn to use the system through a self instruction feature. ATS is documented in Section 4 of USERBOOK. Any ATS problems should be directed to the S/360-65 operator at 978-7107.

QED

QED is a computer program used for editing files containing data, computer programs or text. With this very powerful editor major changes can be made to a file with only a few commands. QED runs only under TSO and its use is limited to University of Toronto staff and students. QED will be documented in the USERBOOK module, 3.3QED and in the QED reference manual.

SCRIPT

SCRIPT, or NSCRIPT is a computer program which provides exceptionally versatile text formatting capabilities including indexing, footnote collection, hyphenation, input file switching, conditional formatting, revision code markers, etc. Unlike ATS, script does not provide terminal support or file manipulation and thus input files must be created by another program such as QED, the TSO editor, ATS or a user-written program. NSCRIPT can be run in batch or under TSO and is documented in the USERBOOK module 3.3NSCRIPT and in the SCRIPT Reference Manual.

SPEAKEASY

SPEAKEASY is a very concise and powerful computer language. SPEAKEASY operations can be applied to arrays of data rather than single data items and its basic functions are described with ordinary mnemonic words rather than mathematical symbols. This language also has the ability to interface with (pass data to/from) many other computer programs, including an easy-to-use graphing facility for Calcomp, Gould and TekTronics graphics devices. SPEAKEASY can be run in batch or under TSO and is documented in the USERBOOK module 3.3SPEAKEASY.

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INTERACTIVE COMPUTER cont´d

TSO

TSO (Time Sharing Option) is a computer program designed to make all the facilities of OS (Operating System) easier to use. Instead of typing job control cards and reading them in, the user signs on to TSO at a typewriter-like terminal and enters a simple request. Features provided by TSO include online dataset access, editing and storing of programs, data and text, compilation of programs with immediate error printouts, interactive debugging, ability to submit job control for batch execution and interactive access to several application program packages (such as SPEAKEASY). TSO is documented in the USERBOOK module 3.3TSO and in the TSO Reference Card.

Users should refer specific problems or questions concerning any of the above facilities to an Advisor or Computing Co-ordinator. Consulting support for these facilities is provided by Ian Darwin, Room 303, 49 St. George (978-7318).

Ian Darwin

APL ´76 CONFERENCE OTTAWA, SEPTEMBER 22-24, 1976

The tenth in a series of international APL conferences will be held at the Skyline Hotel, Ottawa, Ontario, from Wednesday, September 22 to Friday, September 24, 1976.

This year´s conference will examine the latest developments in the use and implementation of APL systems as they relate to applications in the commercial and business world. Session topics include APL Structures and Control Mechanisms, Programming Techniques, File Structures, Commercial Applications, Econometrics, Interactive Management, Finance, Data Bases and Management Information Systems.

The conference bulletin is available for inspection at the Information Office and registration and accomodation may be arranged with:

Mr. R.G. Morrison, Local Coordinator,
Suite 600,
265 Carling Avenue,
Ottawa K1S 2E1, Canada

Ernst Goetze

COMPUTERNEWS SUBSCRIPTION RENEWAL

Last month´s issue of COMPUTERNEWS contained a COMPUTERNEWS Subscription Renewal Form. Subscribers are reminded that if they wish to continue receiving their copy of COMPUTERNEWS, they must complete and return this form to the Information Office, SF128 prior to September 21st. The new mailing list will go into effect with the mailing of the SEPTEMBER issue.

Don Gibson

NEW COMPUTING CO-ORDINATOR SUPERVISOR

I am pleased to announce the appointment of Ralph Lombardi as Computing Co-ordinator Supervisor.

Ralph graduated from U. of T. in 1973 and since then has been employed at UTCC as Computing Co-ordinator at Scarborough College and as a Marketing Representative.

Ralph will be supervising the Computing Co-ordinators at Erindale College, Scarborough College, New Physics and Arts and Science as well as interfacing with the other Computing Co-ordinators.

Anyone having any questions regarding remote terminals may contact Ralph in Room 305 at 49 St. George, 978-7130.

Stan Yagi

PERSONNEL CHANGES

Leaving the Computer Centre this month are Mike DiFulvio, Geoff Groves, Dave Tritchler and Len Prepas.

Mike is going to work for Student Record Services, Len is going to Montreal, Dave will be returning to school and Geoff will be taking a new position outside the University.

We wish all of you the best in your new positions.

June Bridges

HIGH SPEED JOB STREAM ACCESS CONTROL

Implementation of the High Speed Job Stream Access Control system described in last month's issue of COMPUTERNEWS is tentatively scheduled for Monday, September 13, 1976.

An information package containing a detailed description of this Access Control system has been distributed to the instructors of courses using the HSJS. Instructors requiring a copy of this package should contact Don Gibson in SF128, phone 978-5568. Other questions regarding the High Speed Job Stream Access Control system should be directed to the Computing Co-ordinators, or Stan Yagi at 978-7331.

Stan Yagi

HIGH SPEED JOB STREAM ORIENTATION SESSIONS

UTCC will again be holding orientation sessions for first-time users of the High Speed Job Stream. Instructors who wish to arrange an orientation session for their students should contact Don Gibson, Information Office, SF128, 978-5568.

Don Gibson

CLASS C SERVICE

Since June 1, 1976, CLASS C service has been provided at reduced rates for the summer period by charging half the normal memory rate for CLASS C. This reduced rate was advertised as in effect from June 1, 1976 to August 31, 1976. Users are reminded that CLASS C memory charges will return to their normal rates as of September 1, 1976, i.e. the standard price of 1.30 per hundred kilobyte minutes of memory usage at a service factor of 0.75. CLASS C jobs executed up to 6:00 a.m. on September 1, 1976 will be charged at the summer rate. Jobs in the queue after the 8:00 a.m. start-up on September 1, 1976 will not be deleted unless users specifically request cancellation. These jobs will be executed on subsequent nights and will be charged at the normal rate quoted above. Users who wish to ensure that they obtain the cheaper rates should therefore submit their jobs well in advance to avoid any last minute rush and, if necessary, ask UTCC to cancel CLASS C jobs remaining in the queue on September 1 if they do not wish to pay the normal rates.

The CLASS C summer service included two other enhancements:

1) Maximum memory allocation allowed was increased to 350K.
2) Hours of service for CLASS C execution were expanded to allow start-up of CLASS C before midnight when load permitted and, when load permitted to allow weekend execution of CLASS C jobs which were in the queue by Friday evening.

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CLASS C SERVICE cont'd

At present, no changes are planned to these two service expansions. UTCC reserves the right to reduce maximum memory allocation to CLASS C with sufficient user notification should increasing memory demands warrant it. The expanded hours of service will be gradually curtailed by the normal increase in load as the new academic term begins. UTCC will continue to execute CLASS C jobs when load permits before midnight and on weekends. However, the probability of being able to execute CLASS C jobs during these periods will gradually diminish as the demands on the system increase this autumn.

Users who have any further questions on CLASS C service after September 1, 1976 should contact any Computing Co-ordinator. Complete documentation on CLASS C service can be found in USERBOOK module 3.3BATCH.

Derry Cox

LANGUAGE PROCESSORS

There are six major computer languages available on the S/370-165-II, ranging from the lowest level machine language Assembler to the highest level language PL/I.

Assembler is the symbolic representation of the actual instructions used by a digital computer. Assembler programs are usually very efficient but demand a great deal of effort from the programmer.

PL/I (Programmer Language I) is a high level general purpose language encompassing among its users the scientific, commercial, real-time and systems programmers. Efficient and reliable programs are possible with a reasonable programming effort.

Inbetween Assembler and PL/I are ALGOL, SNOBOL, FORTRAN and COBOL.

ALGOL (ALGOrithmic Language) is machine independent and numeric-oriented but has a very limited 'add-on' Input/Output capabilities.

SNOBOL is designed for string manipulation and is particularly useful in areas such as symbolic mathematics, text manipulation, linguistics, etc.

FORTRAN (FORmul TRANSlator), as the name implies, is very useful for mathematical applications and is widely used by scientific, engineering and commercial users.

COBOL (COmmon Business Oriented Language) is designed for business and administration purposes and is heavily used in business and government.

The above languages are available to both background (batch) and foreground (TSO) users of the S/370-165-II. Within each language, various levels of compilers and interpreters exist which allow for more tailored functions of scope, debugging and optimization. These languages and their processors are documented in detail in chapter 3.5 of USERBOOK.

Users with problems or questions concerning the selection and use of the various languages and processors, should contact Kin Fong, Room 204, 49 St. George, 978-4924.

Kin Fong

SIMSCRIPT II.5

SIMSCRIPT II.5 Release 8F was installed at the beginning of August on our system. It was supplied to UTCC free by Consolidated Analysis Centers, Inc. SIMSCRIPT is a discrete event simulation language using the event scheduling approach, rather than the process interaction approach of GPSS. In some ways, this approach is easier to understand and code. UTCC has now taken over support for this system, so reliability should improve as updates will be promptly applied. Information on SIMSCRIPT II.5 is available in the Information Office, Sandford Fleming, Room 128, and at the New Physics Terminal. Anyone interested is invited to call John Roth at 978-8823.

John Roth

TAPE ABENDS AND NEW TCOPY PROCEDURES

One of the most frustrating ABEND messages a multifile tape user can get is the 613 message. Associated with this message is the FEC147I message advising that an I/O error occurred in positioning or reading the tape or that there was an invalid label on the tape. These are all obtuse and generally useless messages when trying to figure out what went wrong.

Briefly, in most cases, what did go wrong is that the user tried to write file N on the tape and there was no file (n-1).

In one instance a user who had 3 files on a tape, ´rewrote´ file 2 without realizing that when something like this is done any files after the file being rewritten are lost. In this case, file 3 was lost. The user then continued on and attempted to add file 4 and the job failed with the 613 completion ABEND.

Normally, when a user gets this ABEND, he should get a TCOPY diagnostic run on the tape to see what he has. TCOPY is described in USERBOOK module 3.3 TAPES.

Two new TCOPY procedures, TCOPYL16 and TCOPY16 have been defined. These procedures will speed up throughput as they allow a user with a known 1600 BPI tape to access any one of the 4 UTCC tape drives. These new procedures will shortly appear in the USERBOOK module 3.3 TAPES. Any questions should be referred to Herb Kugel at 978-7286.

Herb Kugel

APPLICATIONS SUPPORT GROUP

Members of the Applications Support Group are available as user consultants to solve related problems which are beyond the scope of the Computing Co-ordinators and/or terminal advisors. In addition, they maintain existing Applications packages and share with the Marketing Services Group the responsibility of evaluating any new applications packages which could expand UTCC´s existing services to the user community.

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APPLICATIONS SUPPORT cont´d

Each member of the group is responsible for a specific area of Applications. Ernst Goetze is responsible for APL and DATATALK, Ian Darwin provides the application support for Interactive Systems other than APL as well as applications such as SPEAKEASY, SCRIPT and other text processors. Kin Fong is responsible for the IBM Source Language Processors (FORTRAN, PL/I, SORT, COBOL). Herb Kugel, the group´s supervisor, handles all OS, JCL and magnetic tape problems and is also in charge of program design and general consulting. Application support for statistical and numerical analysis packages is also provided by this group. A vacancy currently exists in this position and until a new staff member is appointed any enquires should be directed to Herb Kugel. Although not actually part of the Applications Support Group, Mark Tapia is responsible for the GOULD and Calcomp plotting support at UTCC.

Users are welcome to contact any member of the group for assistance at the following numbers.

Herb Kugel - 978-7286
Ian Darwin - 978-7318
Ernst Goetze - 978-6710
Kin Fong - 978-4924
Mark Tapia - 978-7109

Herb Kugel

STATISTICS AND NUMERICAL ANALYSIS AT UTCC

UTCC offers a full range of statistical packages and numerical routines. The number of packages and routines is constantly increasing; however, SPSS (Statistical Package for the Social Sciences) is the most commonly used package.

The Computer Centre maintains several complete libraries of mathematical subroutines. In addition, USERBOOK Chapter 3.7 and the modules associated with that section are the primary source of reference for statistics and numerical analysis at UTCC.

For assistance and further information re numerical analysis, contact John Roth at 978-6828. For information re statistics, contact Herb Kugel at 978-7286.

Herb Kugel

JCL SCANNING

There is nothing more frustrating than waiting a long time for a job to turn around only to find that it has failed due to a Job Control Language(JCL) error.

Users may not be aware that many JCL applications can be quickly scanned by transforming the JCL into an instream procedure and then running it at a fairly high priority with no mounts and/or without data. This can be done quite easily with pretested JCL which is not already part of a catalogue procedure.

cont´d...

JCL SCANNING cont'd

Users who are in the process of setting up a large JCL application, can obtain further information by calling Herb Kugel at 978-7286.

Herb Kugel

SPEAKEZ SESSIONS

The Mu level of SPEAKEZ has recently been announced. Major areas of enhancement include input/output, database management and LINKULE processing. Input/Output features include improved TABULATE and TYPELINE routines. Database Management provides generic storage similar to the old GSPEAK routines. The LINKULE processor has been re-written to greatly reduce I/O wait time involved in opening and closing libraries, which should reduce the cost of running SPEAKEZ jobs or sessions. UTCC hopes to have a test version of Mu in the near future. Interested users should contact Ian Darwin, 978-7318.

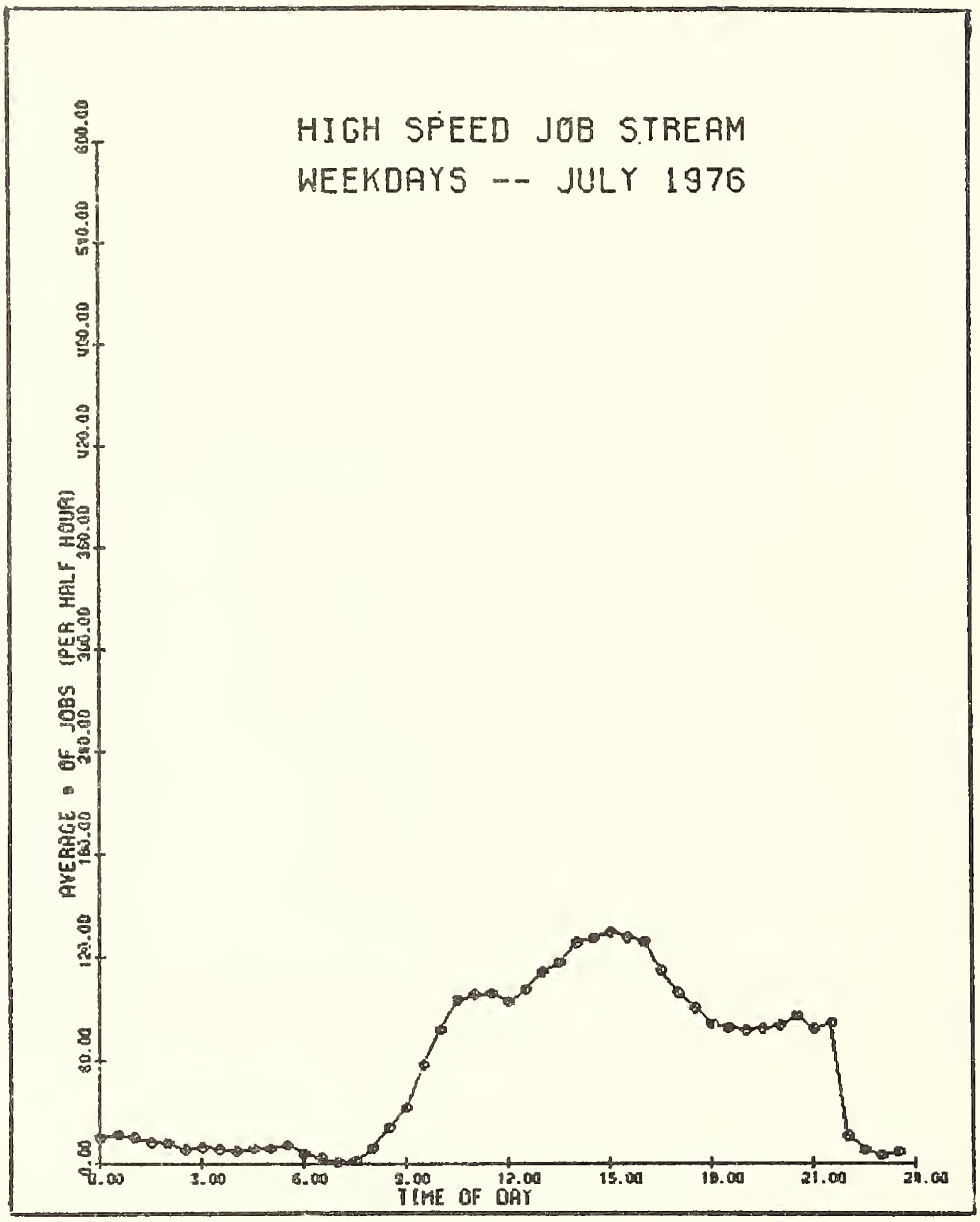
Ian Darwin

HSJS MONTHLY STATISTICS

During the month of July 1976, 63,933 jobs were processed compared with 78,478 jobs for the previous year, a decrease of 18.5%.

The following charts summarize the HSJS activity for the month of July. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia



```
RESOURCE_USAGE_BY_PROCESSOR

                              ||      TOTAL PER PROCESSOR          ||     AVERAGE PER USE         |
                              ||   CPU    |  #CARDS  |   #LINES    ||  CPU   |#CARDS |  #LINES   |
PROCESSOR | #USES  %TOTAL     ||  (MIN)   |   READ   |   PRINTED   || (MIN)  | READ  |  PRINTED  |
-----------------------------------------------------------------------------------------------
WATFIV    | 34030   (53)      ||  662.31  | 7494828  |   7250918   || 0.016  |  220  |    212    |
SP/K      | 11294   (18)      ||  205.30  | 1480302  |   2316190   || 0.016  |  128  |    204    |
PL/C      |  7646   (12)      ||  163.51  | 1565955  |   2418502   || 0.020  |  204  |    316    |
UTILITY   |  3119   ( 5)      ||   11.25  |  571575  |    686886   || 0.000  |  180  |    220    |
SP/KM     |  3015   ( 5)      ||   51.75  |  293939  |    421309   || 0.016  |   96  |    136    |
ASMG      |  2118   ( 3)      ||   56.58  |  534738  |    669409   || 0.023  |  252  |    316    |
WATBOL    |   694   ( 1)      ||    8.36  |  177193  |    174481   || 0.012  |  252  |    248    |
SPSSQ     |   621   ( 1)      ||   14.56  |  158005  |    128524   || 0.023  |  252  |    204    |
SPITBOL   |   448   ( 1)      ||    4.51  |   66002  |     89311   || 0.008  |  144  |    196    |
ALGOLW    |   441   ( 1)      ||    9.13  |   87860  |    121580   || 0.020  |  196  |    272    |
UTILITY   |   232   ( 0)      ||    0.36  |   15231  |     17409   || 0.000  |   64  |     72    |
SIMON     |   120   ( 0)      ||    0.33  |    2752  |      6740   || 0.000  |   20  |     56    |
PLUTO     |    83   ( 0)      ||    0.09  |     720  |      3579   || 0.000  |    8  |     40    |
ASSIST    |    40   ( 0)      ||    0.16  |    2433  |      4024   || 0.004  |   60  |    100    |
SNAP      |    14   ( 0)      ||    0.16  |     716  |      1841   || 0.008  |   48  |    128    |
$         |    12   ( 0)      ||    0.03  |    1090  |      1216   || 0.000  |   88  |    100    |
LISP      |     6   ( 0)      ||    0.03  |      99  |       378   || 0.004  |   16  |     60    |
UTILITY   |     0   ( 0)      ||    0.00  |       0  |         0   || 0.000  |    0  |      0    |
-----------------------------------------------------------------------------------------------
TOTAL       63933             || 1188.41  | 12453438 |  14312297   || 0.019  |  194  |    223    |
```

GPJS - SOFTWARE USAGE STATISTICS

The following chart summarizes the software usage per classified procedure and program names for the General Purpose Job Stream from July 5, 1976 to August 9, 1976.

SOFTWARE	USES (#JOBSTEPS)	(%)
ALGOL	209	0
APLSV	31	0
ASM	834	2
COBOL	268	0
CSMP	20	0
DATATEXT	324	1
DBUGUTIL	18	0
DISKUTIL	2,678	8
DSUTIL	5,042	15
DYNAMO	15	0
FORMAC	2	0
FORTRAN	10,133	32
GPSS	37	0
GRAPHICS	1,800	5
JCLUTIL	149	0
MARKEXAM	12	0
MARKIV	597	1
MPS/MPSX	36	0
OSUTIL	289	0
PAPERTAP	102	0
PL/I	2,103	6
RPG	55	0
SAS	7	0
SERVAID	296	0
SNOBOL	734	2
SORTMERG	1,515	4
SPEAKEZ	46	0
SPSS	2,696	8
SSP/BMDD	527	1
TAPEUTIL	529	1
TIPRS	35	0
TSO	64	0
XFR	333	1
TOTAL	31,536	

Kin Fong

S/370-165-II RELIABILITY

The reliability statistics for July indicate an uptime percentage of 96.4 while the average number of unscheduled IPL´s per day reached 0.72. The number of scheduled hours of production for July totalled 471.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Jan/75	95.7	2.77
Feb/75	96.0	1.14
Mar/75	96.7	1.10
Apr/75	98.6	0.70
May/75	99.4	0.60
Jun/75	97.4	0.79
Jul/75	95.2	1.23
Aug/75	97.6	0.83
Sep/75	99.1	0.87
Oct/75	97.2	1.13
Nov/75	95.8	1.63
Dec/75	99.4	0.48
Jan/76	99.1	0.43
Feb/76	98.9	0.97
Mar/76	96.8	1.03
Apr/76	99.3	0.52
May/76	98.8	0.67
Jun/76	96.5	0.97
Jul/76	96.4	0.72

The percentage breakdown for total system downtime for July was:

HARDWARE: 790 minutes (76.7%)
SOFTWARE: 74 minutes (07.2%)
OTHER : 166 minutes (16.1%)

The major events contributing to these downtime totals were as follows:

cont´d...

S/370-165-II cont'd

July 11 - 173 minutes down - 1 IPL

125 minutes attributed to an extremely high machine room temperature which necessitated a complete power down of the system while Physical Plant carried out corrective maintenance.

48 minutes due to numerous channel detected errors on the ITEL controller attached to channel 3 causing 002 wait states. ITEL corrective maintenance found and replaced a number of defective cards.

July 12 - 410 minutes down - 3 IPL's

All time and reloads charged to re-occurring problems in the ITEL controller attached to channel 3. Several bad cards were replaced. The cause of the errors was possibly due to a rise in temperature and humidity in the machine room to which the controller itself was extremely sensitive. TSO and APLSV were down for an additional 230 minutes while the system was being run on ONE 7330 channel.

July 25 - 93 minutes down - 1 IPL

All time resulted from SCU checks followed by 0E2 wait states caused by a defective card in the high speed buffer area of the /165 CPU. IBM corrective maintenance found and replaced the defective card.

July 26 - 211 minutes down - 3 IPL's

190 minutes charged to continuing IBM maintenance on the high speed buffer for which a card was replaced.

15 minutes resulted from a "hung" condition in the DISPLAYS program which could not be restarted. A system reload rectified the problem.

6 minutes due to an IGF002W machine error followed by an A05 wait.

July 30 - 54 minutes down - 4 IPL's

27 minutes resulted from a loss of O.S. response.

13 minutes charged to an A0A wait on the 2944 controller at EUT. A bad card was replaced by IBM.

14 minutes due to being unable to set the "time of day" clock in the /165 CPU. The problem was rectified by setting the date and time under the "one pack" system.

Paul Scarborough

```
                DOWNTIME REPORT ON    S/370   FOR JUL 76

-----------------------------------------------------------------------------------------------------------------------------
|                                                          REIPLS(FREQ) // DOWNTIME (MN)                                     |
| DAY  REIPL   DNTIME 0    5    10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
=====================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| T  1 (CENTER CLOSED) |                                                                                                     |
| F  2 (CENTER CLOSED) |                                                                                                     |
| S  3     1      10   |□*********                                                                                           |
| S  4     0       0   |                                                                                                     |
| M  5     0       0   |                                                                                                     |
| T  6     0       0   |                                                                                                     |
| W  7     0       0   |                                                                                                     |
| T  8     0       0   |                                                                                                     |
| P  9     0       0   |                                                                                                     |
| S 10     0       0   |                                                                                                     |
| S 11     1     173   |□*************************************************************************************************** 173 |
| M 12     3     410   |□□□************************************************************************************************* 410 |
| T 13     0       0   |                                                                                                     |
| W 14     1      10   |□*********                                                                                           |
| T 15     0       0   |                                                                                                     |
| F 16     0       0   |                                                                                                     |
| S 17     0       0   |                                                                                                     |
| S 18     0       0   |                                                                                                     |
| M 19     1      19   |□******************                                                                                  |
| T 20     1      10   |□*********                                                                                           |
| W 21     0       0   |                                                                                                     |
| T 22     0       0   |                                                                                                     |
| F 23     0      15   |***************                                                                                      |
| S 24     1       5   |□****                                                                                                |
| S 25     1      93   |□********************************************************************************************        |
| M 26     3     211   |□□□************************************************************************************************* 211 |
| T 27     1       5   |□****                                                                                                |
| W 28     2      11   |□□*********                                                                                          |
| T 29     1       4   |□***                                                                                                 |
| F 30     4      54   |□□□□**************************************************                                               |
| S 31     0       0   |                                                                                                     |
-----------------------------------------------------------------------------------------------------------------------------

LEGEND       : ONE □  =ONE UNSCHED. IPL
               ONE *  =ONE MINUTE OF DOWNTIME

                        TOTAL SCHEDULED HOURS OF PRODUCTION :  471
                        TOTAL DOWNTIME (MN)   : 1030 , AVG/DAY :  35.52 , AVG/PROD HOUR :   1.06
                        TOTAL UNSCHED. IPL'S :   21 , AVG/DAY  :   0.72
                        DOWNTIME RATE IS      :  3.64 PERCENT OF SCHEDULED PRODUCTION HOURS
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of July for each of APL and ATS were 99.59% and 99.66% of scheduled operation, respectively. The number of scheduled hours of operation during the month of July totalled 461, while the number of unscheduled IPL´s per day was 0.17. In addition to the scheduled time, Interactive Services were available for approximately 125 hours of unattended weekend operation.

The percentage breakdown of total S/360 downtime for July was: Hardware - 83 minutes (90.22%), other - 9 minutes (9.78%). Five unscheduled IPL´s were required as a result of the failures. The major events contributing to downtime were as follows:

July 6: 24 minutes of downtime were attributed to 1052 console malfunction during IPL.

July 19: 22 minutes of downtime resulted in IPL due to problems in FUTILITY and errors in background FLIB.

July 31: a) CPU entered solid system state at 12:30 and 13:50 due to hardware failures in multiplexor channel.

b) IGF013W channel error - machine check due to channel check interruption and CCH could not recover from the failure.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems.

Kam Jain

	DOWNTIME (MIN)		
DATE	APL	ATS	REASON
Tue. July 6	24	26	*Drive belt replaced in 1052 console (Hardware)
Mon. July 19	22	-	APL abended-problems FUTILITY (Software)
Wed. July 21	9	9	*IPL clock set incorrectly (Operational)
Sat. July 31	47	49	**CPU entered solid system state (Hardware)
Sat. July 31	12	10	*IGF013W-channel error (Hardware)
TOTAL	114	94	*IPL required

System Failures July 1 - July 31, 1976

APL AT THE UNIVERSITY OF TORONTO

UTCC supports APL services and facilities that are among the most advanced and comprehensive available anywhere.

Primary references for APL at U of T are USERBOOK Section 4 and the modules 3.3APLSV and 3.3ARJES.

In this article the main features of each of our two APL systems, SHARP APL on the IBM SYSTEM 360/65, and APLSV, introduced last year on the IBM SYSTEM 370/165-II, will be presented. Additional information and assistance may be obtained by calling DATATALK at 978-6710, 9am-6pm, Monday-Friday.

U of Toronto SHARP APL:Features and References:

SHARP APL is the standard IBM APL/360(XM6) with numerous UTCC/IPSA enhancements and performance optimizations.

APL/360 (APL/360-OS USER´S MANUAL, IBM GH20-0906-1)
SHARP APL DISK FILES (SHARP APL File Subsystem Instruction Manual)
SHARP APL Keyword Primitive Functions
 FMT (SHARP APL Report Formatting Manual) for numeric to character conversion, with decoration codes
 FI, VI for character to numeric conversion
 WS, FD for dynamic WS environment control and information, dynamic function erase, lock, fix, and canonical representation.

HIGHSPEED FILEPRINT (USERBOOK Section 4, and WS 1 FILEPRINT)
XFR DATA TRANSFER UTILITY (USERBOOK Section 4) for the transfer of numeric and character data between SHARP APL files on the SYSTEM 360/65 and OS datasets on the SYSTEM 370/165-II.

UTCC enhancements to APL/360 include ARBOUT, QUIETLOAD, AUTOLOAD, CLEAROUT, WALKAWAY, COMEBACK, NOCLEAR, TABS, SETLINK, DELAY, SETFUZZ, KEYB and ORIGIN.

U of Toronto APLSV:Features and References:

APLSV (APL Shared Variables, Programming RPQ, User´s Guide, IBM SH20-1460-1)

Time Shared Input/Output(TSIO) Processor (same reference as above)

Many UTCC enhancements available on SHARP APL are also available on APLSV from the WS´ 1 WSFNS and 1 UTFNS. USERBOOK Module 3.3APLSV is the primary source of reference for these facilities.

cont´d...

APLSV RJE/RJO:

UTCC supports RJE/RJO interfaces to the SYSTEM 370/165-II which are enhancements to the basic capabilities of APLSV and implementation dependent. APLSV RJE/RJO is an advanced concept in APL processing and allows the APL user a consistent and powerful form of access to every batch facility and processor.

USERBOOK Module 3.3ARJES(A Remote Job Entry System) describes a UTCC developed document storage and edit facility for the efficient manipulation and storage of program source and Job Control Language for batch execution.

WELCOME TO DATATALK

DATATALK is becoming one of UTCC's old facilities, but in case you haven't heard...

DATATALK:Good morning, DATATALK services.
C:Hello, DATATALK?
D:Yes. Good morning.
C:What in the world is DATATALK?

University of Toronto DATATALK is an APL based computer service offered by UTCC at no charge for casual inquiry and problem solving over the telephone. It is available to anyone within the University of Toronto community and has no prerequisites to its use.

We solve problems-arithmetic that you might have had to do on a desk calculator, linear least squares fits to experimental data, linear equations, descriptive statistics, numerical integration, function tabulation, T-tests - and we try to provide the answer to your problem during the telephone conversation whenever possible.

This year, we hope to reach far more of the University community. DATATALK services are free and available to everyone within the University community by calling 978-6710, 9AM-6PM, Monday - Friday.

cont'd...

APL Information and Advisory Services:

University of Toronto DATATALK is your nearest resource for APL programming advice and information on the programs supported by UTCC in the APL public libraries.

Call 978-6710 for an immediate answer to your query, or visit our office, Room 205, 49 St. George Street, 9AM-6PM, Monday through Friday.

SHARP APL Public Library CATALOG System:

The SHARP APL CATALOG is a comprehensive classification and documentation system for the entire system of SHARP APL public libraries.

The CATALOG is noteworthy in two respects: it classifies all APL public library programs by application area, into 21 application areas, and the entire CATALOG may be accessed by loading only one APL workspace, 1 WSINDEX.

For more details,

```
)LOAD 1 WSINDEX
```

and display the variable

```
CATALOGHOW
```

A copy of the entire CATALOG is available for reference at the UTCC Information Office, SF128.

SHARP APL HOTNEWS:

The SHARP APL HOTNEWS facility is a collection of timely information and programming hints on the use and practise of APL programming at U of T and on those aspects of APL at U of T that may affect your use of the APL systems.

To access the HOTNEWS facility,

```
)LOAD 1 HOTNEWS
```

and display the variable

```
DESCRIBE
```

for a description of how to use the functions available.

cont´d...

SHARP APL HOTNEWS cont´d

Current HEADLINES begin with,

```
33 03/08/76 STANDARD REPRESENTATION OF THE DATE
32 14/07/76 HIGH-SPEED PRINTING OF ALL 66 LINES
31 06/07/76 AVOIDING FILE RESERVATION AND FILE FULL ERRORS
30 06/07/76 SHARP APL CHARACTER SET(EXTENDED)
29 06/07/76 APL )SEAL COMMAND
                    .
                    .
                    .
```

and many more.

TEKTRONIX APL GRAPH-II:

APL GRAPH-II is a set of seven APL workspaces written by TEKTRONIX INC. to provide a high-level command language for interactive graphics from APL on the TEKTRONIX Model 4013 and 4015 series terminals.

The APL GRAPH-II workspaces are available on both the SHARP APL and APLSV systems, as follows:

APL GRAPH-II WORKSPACE	TERMINAL TYPE
20 APLGRAPH2	4013,4015
20 MINI	4013,4015
20 EGM	4015 only
20 EXAMPLES	4013,4015
20 ARBOUT	4013,4015
20 TEK2741 20 MINI2741	only for TEKTRONIX 4013 and 4015 series terminals equipped with 2741 type hardware interface

The documentation for these packages is available from TEKTRONIX INC. and may be ordered from the UTCC Information Office. There are two manuals, PLOT-10, APL GRAPH-II USER´S MANUAL(#062-1617-00) and PLOT-10, APL GRAPH-II SYSTEM MANUAL(#070-1783-00).

cont´d...

IBM 5100 APL/BASIC Mini Computer:

UTCC and CSRG jointly support an IBM 5100 APL/BASIC mini-computer at the CRF Lab.

The unit includes 64K of read/write fast storage, APL and BASIC programming languages, the Model 5103 printer and 5106 auxiliary tape storage, as well as low speed communications interface hardware.

Details are available from the UTCC Marketing Services Group, 978-6877.

SHARP APL TO APLSV WSTRANS FACILITY-EXTENDED:

The APL workspaces 4 WSTRANS on each of the APL systems, SHARP APL on the SYSTEM 360/65 and APLSV on the SYSTEM 370/165-II, provide a convenient utility for the automatic transfer of APL workspaces from one system to the other.

There are very few technical prerequisites to the use of these facilities. Please refer to the DESCRIBE variables in these workspaces, or to the SHARP APL CATALOG articles on pages 4.22 to 4.25 for information and explanations.

APLSV RJO and SYSTEM QUEUE:

The APLSV workspace 5 BKLG provides a UTCC supported facility for system job and job queue status reports from APLSV and for the retrieval of job output that has been sent by ROUTE PRINT APL.

Please refer to the DESCRIBE variable in the WS 5 BKLG for more details.

Events to Look Forward To This Fall:

UTCC will support the APL/FULL PRINT TRAIN for the full APL character set mixed with lower case correspondence character set(TN train, or Courier 029 typeball) and certain additional special characters for high-speed SHARP APL and APLSV initiated file prints.

A new SHARP APL CATALOG facility with more precise query facilities and offline interfaces to the APL/FULL print train will be available. Average line print costs for most of the CATALOG sections will be about $1.50. In addition, there are plans to add offline options to the automatic APL workspace listers in the workspaces 4 WSL on the SHARP APL and APLSV systems.

UTCC is currently working on a CATALOG and HOTNEWS facility on APLSV, more APLSV-OS interface programs and data management utilities, and a SHARP APL general disk to tape utility initiated from the foreground.

Ernst Goetze

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL SV and TSO services
- 4 megabytes of memory
- 1 drum (2301)
- 16 disk drives (3330)
- 8 disk drives (2314)
- 7 magnetic tape drives (5 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- 26 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL and ATS

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter

UTCC DIRECTORY

	ROOM	PHONE 978-
ASSOCIATE DIRECTOR		
Al Heyworth	SF214C	4936
ADMINISTRATION MANAGER		
Dave Scobie	SF143	8948
INFORMATION OFFICE		
General Inquiries	SF128	4990 or 4991
Don Gibson	SF128A	
MANAGER, SERVICES		
Stan Yagi	SG200	7331
MANAGER, MARKETING AND PROGRAMMING SERVICES		
Dave Scobie	SF143	8948
COMPUTING CO-ORDINATORS		
Sandford Fleming Terminal		
Mark Tapia	SF125	7109
Program Advisors	SF117	8599
Erindale		
Clem DiPlacido		828-5311
Scarborough		
Martin Hubel		284-3173
Arts and Science		
Dave Tritchler	SS2104	6509
New Physics		
John Roth	NP1202	8823
SUPERVISOR, APPLICATIONS SUPPORT		
Herb Kugel	SG304	7286
MANAGER, OPERATIONS		
Derry Cox	SF113	7092
SUPERVISORS, OPERATIONS		
Paul Scarborough (S/370-165-II)	SF114	6220
Kam Jain (S/360-65)	NP333	7374
Dave Wong (S/370-155)		6864
MANAGER, SYSTEMS		
Rein Mikkor	SF116	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	SF113	4967
MANAGER, COMPUTER RESEARCH FACILITY		
Dennis Smith	SF214B	4800
LAB CO-ORDINATOR (CRF)		
Krishna Patnaik	SF207	4086
ACCOUNTS		
Ann DeFazio	SF139	7148
Wynona Bardgett	SF139	8702
ACCESS CODES		
Yvonne Bowen	SF139	8703
ASSISTANT MANAGER, INFORMATION SYSTEMS TERMINAL		
George Milo		5040

NOTE:

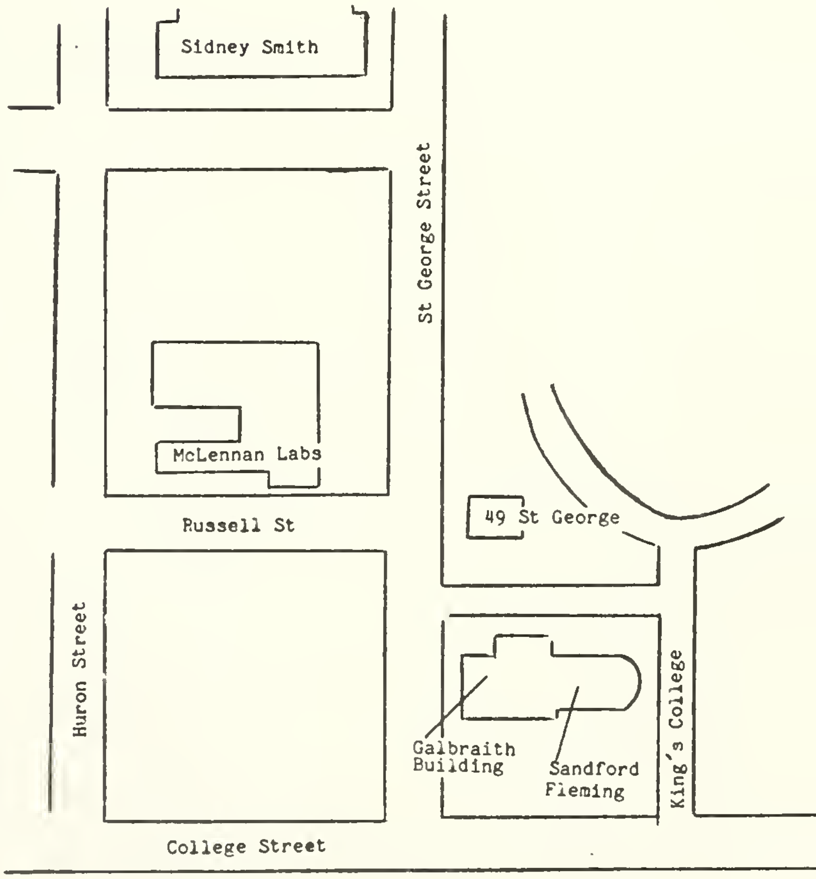
SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/370, TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

	DIAL-UP	ADVICE
APL - 2741	7200	6710
APL(ASCII)	7200	6710
APL SV - 2741	7239	6710
APL SV - TTY	7447	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710



UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA,